What Is Claimed Is:

1. A thin-film deposition apparatus, comprising:

a vacuum reaction chamber and a dividing plate, the vacuum reaction chamber is divided by the dividing plate into a plasma discharge space and a film deposition process space, the dividing plate having internal spaces and a plurality of holes therein, the internal spaces are separated from said plasma discharge space and the internal spaces are connected with the film deposition process space, the plurality of holes connect the plasma discharge space with the film deposition process space, and a plasma is used to generate radicals in the plasma discharge space, which radicals are introduced into the said film deposition process space through the plurality of holes in the dividing plate, and a precursor gas is directly introduced into the film deposition process space from the internal spaces, whereby the radicals and precursor gas introduced into the film deposition process space react together to deposit a film on a substrate disposed in the film deposition process space,

the dividing plate is made of a plurality of laminated plates connected together by securely bonding them over substantially an entire area of their interfacial surfaces.

2. The thin-film deposition apparatus according to Claim 1, wherein the dividing plate is fixed by caulking with a plurality of metal fixings to securely bond the plurality of laminated plates over the entire area of their interfacial surfaces, and the plurality of holes provided in the dividing plate are provided through the plurality of metal fixings.

3. The thin-film deposition apparatus according to Claim 1, wherein the dividing plate is configured by screwing a plurality of metal fixings provided with threaded parts on the outside thereof into the plurality of laminated plates, thereby securely bonding them over the entire area of their interfacial surfaces, and

the plurality of holes provided in the dividing plate are provided through the plurality of metal fixings.

4. The thin-film deposition apparatus according to Claim 1, wherein the dividing plate is made by connecting together a plurality of laminated plates by securely bonding them over the entire area of their interfacial surfaces, and the plurality of holes provided in the dividing plate are formed by piercing through it at positions where the internal spaces are not disposed.

5. The thin-film deposition apparatus according to Claim 1, wherein the plurality of holes are formed so as to satisfy the condition $uL/D > 1$, where u is the gas flow rate inside the holes, L is the effective length of the holes, and D is the gas interdiffusion coefficient.

6. The thin-film deposition apparatus according to Claim 2, wherein the plurality of holes are formed so as to satisfy the condition $uL/D > 1$, where u is the gas flow rate inside the holes, L is the effective length of the holes, and D is the gas interdiffusion coefficient.

7. The thin-film deposition apparatus according to Claim 3, wherein the plurality of holes are formed so as to satisfy the condition $uL/D > 1$, where u is the gas flow rate inside the holes, L is the effective length of the holes, and D is the gas interdiffusion coefficient.

8. The thin-film deposition apparatus according to Claim 4, wherein the plurality of holes are formed so as to satisfy the condition $uL/D > 1$, where u is the gas flow rate inside the holes, L is the effective length of the holes, and D is the gas interdiffusion coefficient.

9. A thin-film deposition apparatus, comprising:

a vacuum reaction chamber; and

a dividing plate separating the vacuum reaction chamber into a plasma discharge space and a film deposition space;

the dividing plate includes a plurality of plates laminated together at their interfacial surfaces and having a plurality of internal spaces that are connected to the film deposition space, the dividing plate further having a plurality of holes that connect the plasma discharge space to the film deposition space, and which plurality of holes are distinct from the plurality of internal spaces;

wherein the plurality of plates are bonded together over a sufficiently large portion of the interfacial surfaces so as to prevent radicals passing through the plurality of holes from passing between any of the plurality of plates into any of the internal spaces, wherein the plurality of plates are bonded together at an outer periphery thereof and in at least some portions of the laminated plates that are within the outer periphery.

10. The thin-film deposition apparatus according to Claim 9, wherein the plurality of plates are bonded together by a plurality of rivets.

11. The thin-film deposition apparatus according to Claim 9, wherein the plurality of plates are bonded together by a plurality of threaded fasteners.

12. The thin-film deposition apparatus according to Claim 10, wherein the plurality of holes extend through the rivets.

13. The thin-film deposition apparatus according to Claim 11, wherein the plurality of holes extend through the threaded fasteners.

14. The thin-film deposition apparatus according to Claim 9, wherein all of the interfacial surfaces are bonded together.

15. A dividing plate for a thin-film deposition chamber having a vacuum reaction chamber that includes a plasma discharge space and film deposition space, the dividing plate comprising:

a plurality of plates laminated together at their interfacial surfaces;

a plurality of internal spaces within the dividing plate, the internal spaces being connected to the film deposition space; and

a plurality of holes extending through the dividing plates so as to connect the plasma discharge space and the film deposition space, the plurality of holes being distinct from the plurality of internal spaces;

wherein the plurality of plates are bonded together over a sufficiently large portion of the interfacial surfaces so as to prevent radicals passing through the plurality of holes from passing between any of the plurality of plates into any of the internal spaces, wherein the plurality of plates are bonded together at an outer periphery thereof and in at least some portions of the laminated plates that are within the outer periphery.

16. The dividing plate of claim 15, wherein the plurality of plates are bonded together by a plurality of rivets.

17. The dividing plate of claim 15, wherein the plurality of plates are bonded together by a plurality of threaded fasteners.

18. The dividing plate of claim 16, wherein the plurality of holes extend through the rivets.

19. The dividing plate of claim 17, wherein the plurality of holes extend through the threaded fasteners.

20. The dividing plate of claim 15, wherein all of the interfacial surfaces are bonded together.

21. A thin-film deposition apparatus, comprising:

a vacuum reaction chamber;

means for dividing the vacuum reaction chamber into a plasma discharge space and a film deposition space;

the dividing means includes a plurality of internal spaces for retaining a precursor gas, said plurality of spaces being connected to the film deposition space;

the dividing means further including means, distinct from the plurality of internal spaces, for communicating radicals from the plasma discharge space to the film deposition space;

the dividing means including a plurality of plates bonded together over a sufficiently large portion of their interfacial surfaces so as to prevent radicals passing through the communicating means from passing between any of the plurality of plates into any of the internal spaces.

22. The thin-film deposition apparatus according to Claim 21, wherein the plurality of plates are bonded together over substantially all of their interfacial surfaces.

23. The thin-film deposition apparatus according to Claim 21, wherein all of the interfacial surfaces are bonded together.